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ABSTRACT

A year after graduation, a survey was attempted by the Massachusetts Board of Regents of all 1981-82 career graduates of public community colleges in the state (N=5,267). Of the 1,881 responding graduates, 847 reported that they were employed full-time, and 737 of the working graduates gave the board permission to contact their employers for an assessment of their performance. The employers of the 737 graduates were surveyed using the Employer Follow-Up (EFU) questionnaire developed as part of the Vocational Education Data System (VEDS). Study findings, based on a 79.8% response rate, included the following: (1) overall, the graduates were rated between good and very good by their employers with respect to technical knowledge, work attitudes, work quality, technical skills, overall quality, and relative preparation, as compared to co-workers who graduated from similar programs; (2) graduates were rated lowest on technical skills and technical knowledge; (3) graduates who were working full time in their area of training were rated significantly higher on technical knowledge and overall quality than graduates working in areas not related to their training; (4) Technology and Human Services graduates working in a field related to their training received higher ratings than other graduates, with Medical/Health Science graduates having the lowest average ratings; and (5) overall, males and females received similar performance ratings, though males had significantly higher average wages than females. Comments on the labor- and time-intensive character of the EFU are included. (ALB)

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Results of the VEDS Employer Follow-Up Survey for Massachusetts Community Colleges

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RESULTS OF THE VEDS EMPLOYER FOLLOW-UP SURVEY FOR MASSACHUSETTS COMMUNITY COLLEGES

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Abstract

This paper presents the results of the mandated VEDS employer follow-up survey (EFU) for 15 public community colleges. Occupational/career program graduates who were employed full-time and who consented to have their employers contacted (N=588) were survey between one and two years after graduation. As demonstrated by several empirical tests, neither volunteerism nor response rates were a problem in this study.

In general, community college graduates were rated between good and very good on the VEDS-required quality of work and preparation EFU items. Significant differences between community colleges, programs, and the same program at different community colleges were found.

No correlations were found between EFU ratings and average hourly wage, even within program areas, indicating that the average hourly wage of graduates is a flawed index of program or graduate quality.

No significant differences were found between female and male EFU ratings, but large significant differences in average hourly wage were found, even within program areas. This finding tends to support current contentions that women are not getting equal pay for equal quality or work in the marketplace.

Paper presented at the 1988 annual conference of the Eastern Educational Research Association, February, Miaimi, Florida.

Problem Statement

The Vocational Education Data System (VEDS) is the major source of information for monitoring the impact of federal funds allocated for vocational education under PL94-482 and for assessing vocational educational trends nationally, locally, and at the state level. In addition to enrollment, personnel, financial, graduate, and student follow-up (SFU) data, the VEDS' system requires that educational institutions survey those employers who have hired their graduates concerning the employer's satisfaction with the graduate's preparation, work habits, attitudes, and on-the-job performance. A federally specified survey and survey design, moreover, must be used in conducting the Employer Follow-Up (EFU) component of the VEDS system.

Very few educational institutions have actually implemented the EFU component of the VEDS system, and very little is known about the actual implementation of this key component of the VEDS system. This paper, therefore, reports the findings of a uniform, centralized, and state-wide implementation of the EFU survey by the Massachusetts Board of Regents for Massachusetts' community colleges.

Methodology

There are 15 public community colleges in Massachusetts which offer over 40 different career (occupational educational) programs. The VEDS EFU survey is sent to those employers of students working full-time one year after graduation who consent to have the survey sent to their employer. These particular students and employers can only be identified from the VEDS student follow-up (SFU) survey which

is sent to all degree program graduates one year after graduation.

A VEDS SFU survey was mailed to all 1981-1982 public community college career program graduates (N = 5,267) by Massachusetts Board of Regents. Of these graduates, 1,881 (35.7%) returned surveys and 3,386 (64.3%) did not.

Surveys were returned directly to the Board by graduates and this same methodology was used in conducting the employer follow-up survey.

Of the 847 graduates who reported that they were employed full-time, 737 (87%) consented to have their employers contacted (see Table 1). Of these students, employers returned 588 (79.8%) of the surveys sent, with 492 of these surveys being for graduates employed full-time in their area of training and 80 being for those who were employed full-time not in their area of training (see Table 2). These graduates had been working in their current job an average of 1.7 years and 88% of them were rated by their immediate supervisor. In all, 192 employers and 208 supervisors who did the actual ratings were in the sample.

As can be seen from Table 1, no statistically significant differences in the proportions of males and females were found among those graduates who were employed full-time, those who consented to have their employer contacted, and those graduates for whom EFU surveys were returned, although there were two tendencies towards significant differences ($p<.10$). The same results were found in terms of volunteerism and return rates by program area (Table 2). The effects of volunteerism and response rates in the present study were negligible at worst, in terms of mean levels, correlations and generalizations. This view is supported by a study of a ten percent

Table 1: SUMMARY OF RESPONSE RATES AND RESPONSE PERCENTAGES BY SEX AND EMPLOYMENT STATUS

	Total	Females	Males	Related
1.Population	5267	3550 (67.4%)	1717 (32.6%)	
2.Returned Follow-up	1447 (35.4%)	1006 (68.1%)	471 (31.9%)	
3.Employed full-time	847 (58.5%)	569 (67.1%)	278 (32.8%)	608 (71.7%)
4.Consented to EFU survey	737 (87.0%)	518 (29.7%)	219 (70.3%)	523 (70.9%)
5.EFU survey returned	588 (80%)	436 (74.2%)	152 (25.8%)	492 (83.6%)

Comparisons of response rates by sex

Comparison	Chi-Sq.	df	p.
1.Employed full-time to Consented	1.62	1	>.05
2.Consented to EFU survey returned	2.24	1	>.05
3.EFU eligible to EFU return	7.70	1	<.10
4.SFU return to EFU return	7.00	1	<.10
5.Population to SFU return	10.00	1	<.10

Table 2: SUMMARY OF RESPONSE RATES AND RESPONSE PERCENTAGES BY GENERAL PROGRAM AREA

Program Area	Pop.	SFU	Empl.	Con.	Returned
Services	179	41	32	30	26
Medical/Health	1377	374	248	214	206
Child Care/Food	153	36	26	24	22
Sec./Business	2073	662	356	305	219
Technology	1282	326	170	152	106
Production/other	169	38	15	12	9
Total	5233	1447	847	737	588

Sample Composition (percentages) Comparisons

Comparison	Chi-Sq	df	p.
1.Employed full-time to consented	0.24	5	>.05
2.Consented to returned EFU survey	6.60	5	>.05
3.Employed full-time to returned EFU survey	7.20	5	>.05
4.Population to returned SFU survey	13.30	5	>.02*

Table 3: CORRELATIONS BETWEEN EFU SURVEY ITEMS (N=588)

		TK	WA	WQ	TS	OR	RP
1.	TK	1.0	.48	.65	.74	.73	.40
2.	WA		1.0	.71	.46	.60	.36
3.	WQ			1.0	.61	.74	.41
4.	TS				1.0	.67	.37
5.	OR					1.0	.50
6.	RP						1.0

TK=Technical Knowledge
WA=Work Attitute
WQ=Work Quality
TS=Technical Skills
OR=Overall Rating
RP=Relative Quality of Preparation as compared to other similar employees

random sample of non-responders to the student follow-up survey that was done (n=380), which had a response rate of only 35.4%. No significant differences between responders and non-responders were found on 8 VEDS demographic and 4 VEDS dependent variables. A model was developed to explain the findings of this non-responder study. Essentially, this model states that as sample size and the number of factors being studied increases, non-response tends to become a random rather than a systematic variable due to all of the interactions among the many factors involved and reciprocal canceling out effects (see Carifio et al., 1987 for further details).

The VEDS EFU survey consists of six questions which ask the employer to rate the graduate on technical knowledge, work attitude, work quality, technical skills, overall quality of the graduate, and the relative preparation of the graduate as compared to other recent similar graduates employed by the company on a 1 to 5 rating scale where 1 was very poor and 5 was very good. There is also a category on the rating scale that allows the rater to indicate that she or he has no basis to make the judgements requested. The exact wording of each question and the response categories for each question were specified by NCES and must be used as specified.

Table 3 presents the inter-item correlations of the 6 VEDS EFU survey items. As can be seen from Table 3, the inter-item correlations ranged from .36 to .74 with the correlation between quality of preparation as compared to other graduates employed by the company and other items being the lowest. The Cronbach's alphas for the first 4, 5, and all 6 items were r=+.86, r=+.90, and r=+.84 respectively. Internal consistency coefficients did not differ significantly by program area, and the only systematic relationship

found between ratings and a variety of other background variables was a slight positive correlation between length of time employed at the company and level of rating ($r=+.08, p<.10$). All of these findings indicate that the raters were consistent but also were relatively discriminating in their judgements.

Results

Overall, all graduates on the average were rated between good and very good by their employers in the areas of technical knowledge (4.2), work attitudes (4.4), work quality (4.4), technical skills (4.2), overall quality (4.3) and relative preparation as compared to other similar recent graduates employed by the company (4.4). Graduates were rated significantly lower on Technical Knowledge ($F=3.8$, $df=1,587$, $p.<.05$) and on Technical Skills ($F=3.9$, $df=1,587$, $p<.05$) than they were on the other EFU ratings. Graduates who were working full-time in their area of training (see Table 4) were rated significantly higher than graduates who were working full-time in areas not related to their training on Technical Knowledge ($p<.05$) and Overall Quality ($p<.03$) with a tendency towards significant differences on Technical Skills ($p<.10$) and Work Quality ($p<.10$). These differences are in the direction expected and support the validity of the results obtained in this survey as those graduates who are working full-time in areas not related to their training are an internal control group and this is the reason why they are included in the EFU survey by NCES.

Significant differences between community colleges, programs (see Table 5) and between the same program at different colleges across the state were found from the .05 to the .001 level. In

Table 4: MEAN EFU RATINGS OF GRADUATES WORKING IN THEIR AREA OF TRAINING AND GRADUATES WORKING IN AREAS UNRELATED TO THEIR TRAINING (N=588).

	N	TK	WA	WQ	TS	OR	RP
Related	492	4.2	4.4	4.4	4.2	4.3	4.4
Not Related	80	4.0	4.3	4.2	4.1	4.0	4.3
F		3.8*	1.2	2.9	2.8	5.1*	0.1
p		<.05	>.05	<.10	<.10	<.05	>.05

Table 5: MEAN EFU RATINGS OF GRADUATES WORKING IN THEIR AREA OF TRAINING BY GENERAL PROGRAM AREA (N=492)

Program Area	N	TK	WA	WQ	TS	OR	RP
Services	17	4.0	4.4	4.4	4.0	4.1*	4.4
Medical/Health	173	4.1	4.2*	4.3	4.0	4.1*	3.7*
Child Care/Food	19	4.3*	4.4	4.7	4.3*	4.5	4.7
Sec./Business	189	4.2	4.5	4.5	4.1	4.4	4.6
Technology	88	4.4*	4.5	4.5	4.4*	4.4	4.7
Production	6	4.1	4.6	4.3	4.1	4.3	4.6
Total	492	4.2	4.4	4.4	4.2	4.3	4.4
F		2.6*	3.5*	2.2	2.5*	3.2*	13.5*
p		<.05	<.01	>.05	>.05	<.05	<.001

Table 6: MEAN EFU RATINGS OF FEMALE AND MALE GRADUATES WORKING IN THEIR AREA OF TRAINING (N=492)

	N	TK	WA	WQ	TS	OR	RP
Females	384	4.2	4.4	4.4	4.2	4.2	4.5
Males	148	4.3	4.5	4.4	4.1	4.2	4.2
F		1.1	0.9	0.1	0.7	0.2	4.6*
p		>.05	>.05	>.05	>.05	>.05	<.05

general, graduates working full-time in their area of training in Technology and Human Services programs were rated significantly higher on the EFU survey items than other program areas. Graduates in Medical/Health Science programs were overall rated significantly lower than other students and had the lowest average rating on Relative Preparation (somewhat good) of all program areas (see Table 5). These findings, it should be noted, ran parallel to the marginal but not significant differences in employer contact consent rates.

The findings above were a significant factor in the Board of Regents' decision to conduct a state-wide review of two year Medical/Health programs as well as selected programs in other areas at particular community colleges. The overall significance and importance of these findings, however, can only be understood in relationship to findings concerning the relationships between sex, average hourly wage, program areas, and EFU ratings.

Table 6 presents the mean EFU ratings of female and male graduates working in their area of training. As can be seen from Table 6, no significant differences were found between female and male EFU ratings with the exception of relative preparation as compared to other similar recent graduates, where males were rated significantly higher than females ($p<.05$). This difference is due to the low ratings of the Medical/Health programs which are almost exclusive female. When this program area was eliminated from the analyses, no difference between female and male ratings were found.

Table 7 presents the average hourly wages for females and males. As can be seen from Table 7, males had significantly higher average hourly wages than females ($p<.001$), even though no significant differences were found between females and males on the quality of

Table 7: AVERAGE HOURLY WAGE BY SEX

	N	Mean	St.Dev.
Females	148	8.27	2.75
Males	384	6.78	2.02
Total	588	7.22	2.35

Source	SS	df	MS	F	p.
Sex	183	1	183	35.9	<.001*
Error	2989	586	5.1		

Table 8: AVERAGE HOURLY WAGE BY PROGRAM AREA

	N	Mean	St.Dev.
Services	26	5.39	1.40
Medical/Health	206	8.01	1.64
Child Care/Food	22	4.65	1.29
Sec./Business	219	6.58	2.29
Technology	106	8.08	2.64
Production	9	8.46	3.69
Total	588	7.22	2.35

Source	SS	df	MS	F	p.
Program	307	5	61.4	12.8	<.001*
Error	2798	583	4.8		

Table 9: CORRELATIONS BETWEEN EFU RATINGS, AVERAGE HOURLY WAGE AND SEX (n=588)

	Hourly Wage	Sex
Technical knowledge	.07	.06
Work Attitude	-.01	.04
Work Quality	-.01	.02
Technical Skills	.05	.05
Overall Rating	-.05	.01
Relative Preparation	-.11 (p<.05)	.12 (p<.05)

work or preparation EFU survey items (see Table 6).

Table 8 presents the average hourly wage of graduates working full-time in each program area. As can be seen from Table 8, very large significant differences were found in average hourly wage between program area. These differences in average hourly wages, however, are not correlated to the quality of work or preparation ratings of graduates by employers (see Table 5). These findings are most easily seen by examining the correlations between EFU survey items, sex, and average hourly wages.

Table 9 presents the correlations between the EFU survey items, sex, and average hourly wage. As can be seen from Table 9, there are no significant correlations between average hourly wage and the EFU survey items, or sex and the survey items, with the exception of Relative Preparation which is due to the Medical/Health programs which are almost exclusively female. When the Medical/Health program graduates are removed from the sample, the correlations with Relative Preparation are non-significant. Average hourly wage, however, is significantly and strongly related to program area (see Table 8). The quality of a program's graduates as rated by employers, and by inference the quality of the program that trained the graduates, therefore, are not related to the average hourly wage of program graduates, even within a given program area.

No significant differences were found between females and males in EFU ratings by employers, but large significant differences in average hourly wages were found, even within program areas. This finding is more than somewhat startling as there was a wide age range of graduates in this state-wide sample. Age in the sample ranged from 22 to 56 with a mean age of 29.2 years. The median age was 28.1

years. This sample, therefore, contained a high percentage of older women and men, and the differences and lack of differences found were homogeneous across age levels. It should also be noted that in this sample the correlation between age and wage was r=+.34 (p<.001), whereas the correlations between age and EFU ratings were all non-significant. Given these facts, it must be said that the findings of the present study tend to support the contentions of many that women are not getting equal pay for equal quality or work in the market place.

Discussion

The EFU survey component of the VEDS system was found to be highly labor and time intensive and very difficult to implement. Employers, however, were very pleased that they were being surveyed and were being asked to evaluate graduates. The required VEDS EFU instrument used performed reasonably well and was found to be reasonably adequate. The average inter-item correlation coefficient was r=+.61 and Cronbach alphas ranged from r=.84 to r=+.90 over the 6 EFU items. Raters, therefore, were consistent but relatively discriminating in their judgements.

Being limited to surveying only those graduates who consented to have their employer contacted was not found to be a significant empirical problem in the present study, as 87% of the graduates who were employed full-time consented to have their employer contacted, and no significant differences on key VEDS variables were found between those who consented and those who did not. The degree to which this finding can be generalized is strictly an empirical matter that can only be answered by conducting and analyzing more

EFU surveys, particularly as the response rates to the student follow-up survey which were high in the present study as the key determining factor in terms of both EFU sample size and representativeness.

In general, Massachusetts public community college graduates were rated between good and very good by their employers on the EFU survey items. Significant differences in ratings on all criteria were found between graduates working full-time in areas related to their training and graduates working full-time in areas not related to their training, community colleges, programs, and the same programs at different community colleges. These differences not only supported the validity of the results obtained, but were also a direct stimulus to the conducting of more in-depth studies.

No significant correlations were found between EFU ratings and average hourly wages, even within program areas. Highly significant differences in average hourly wages, however, were found between major program areas. The quality of a program as measured by employers' ratings of its graduates, therefore, was not related to the average hourly wages of the program's graduates, even within general program areas.

Average hourly wage is traditionally considered to be the best index of program quality and success in the occupational/career education area. From the results of the present study, however, hourly wage would have to be said to be a very imperfect and highly flawed index of program quality and training success as measured employer ratings of employee quality. Student follow-up surveys alone, therefore, are not sufficient for assessing program quality and effectiveness, and employer follow-up surveys are also needed

for such assessments.

No significant differences were found between females and males in their EFU ratings by employers, but large significant differences in average hourly wages were found, even within program areas. This sample of graduates (N=588), which had a median age of 29.2 years, contained a high percentage of older men and women and the differences and lack of differences were homogeneous across age levels. Given these facts, it must be said that these findings tend to support current contentions that women are not getting equal pay for equal quality or work in the market place. The degree to which the findings of the present study would be true of high school or four year college graduates or community college graduates in other states is an important empirical and theoretical question that needs to be answered by further research.

The employer follow-up component of the VEDS system has been strongly opposed by many different people for a wide variety of reasons, not the least of which is its labor and time intensiveness and its difficulty in implementing. The EFU system can only be implemented by implementing a graduate unit-record system. Even given these difficult factors, the employer follow-up component of the VEDS system would seem to be a worthwhile and needed endeavor relative to assessing graduate and program quality adequately, as well as to assessing progress on equity issues in the market place as opposed to the schools.

References

Carifio, J., and Shwedel, A. Utilizing federal reporting requirements to generate useful data at the local level. New England Educational Research Association, Oct. 1983.

Carifio, J., Biron, R. and Shwedel, A. Results of student and employer follow-up for Massachusetts community colleges career program graduates. Final Report, Massachusetts Department of Occupational Education, 1985.

Carifio, J., Biron, R. and Shwedel, A. A Comparison of Community College Responders and Non-Responders to the VEDS Student Follow-up Suvery. American Educational Research Association, April, 1987.

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